

Local Database

Address Book [200]

Name [210]

Phone [220]

E-Mail [230]

Smith, John

617-321-7654

jsmith@thisdomain.com

Doe, David

206-987-6543

ddoe@thatdomain.com

Jones, Sally

305-678-9012

sjones@otherdomain.com

FIG 2a

XML Document

Reference Numbers

<addressbook>	[250]
<person ID = "1">	[260]
<name>Smith, John</name>	[270]
<phone>617-321-7654</phone>	[280]
<email>jsmith@thisdomain.com</email>	[290]
</person>	
<person ID = "2">	
<name>Doe, David</name>	
<phone>206-987-6543</phone>	
<email>ddoe@thatdomain.com</email>	
</person>	
<person ID = "3">	
<name>Jones, Sally</name>	
<phone>305-678-9012</phone>	
<email>sjones@otherdomain.com</email>	
</person>	
</addressbook>	

FIG. 2b

Changes to Address Book

<u>Event</u> [340]	<u>Reference</u>	<u>Change</u> [350]	<u>Time</u> [360]
David Doe changes phone number	[370]	206-987-6543 to 206-987-3456	8/17/00 7:03:06 p.m.
Sally Jones changes e-mail address	[371]	<u>siones@otherdomain.com</u> to <u>sallyj@newdomain.com</u>	8/17/00 7:03:10 p.m.
Add Carol Roe	[372]	“Add new name”	8/17/00 7:03:14 p.m.
Change name	[373]	Carol Roe	8/17/00 7:03:15 p.m.
Change phone	[374]	205-432-1098	8/17/00 7:03:20 p.m.
Change e-mail	[375]	<u>croe@mydomain.com</u>	8/17/00 7:03:25 p.m.
Remove David Doe	[376]	“Remove name”	8/17/00 7:03:26 p.m.
Carol Roe changes phone number	[377]	205-432-1098 to 205-432-1100	8/18/00 9:51:00 a.m.

FIG. 3a

Event Table

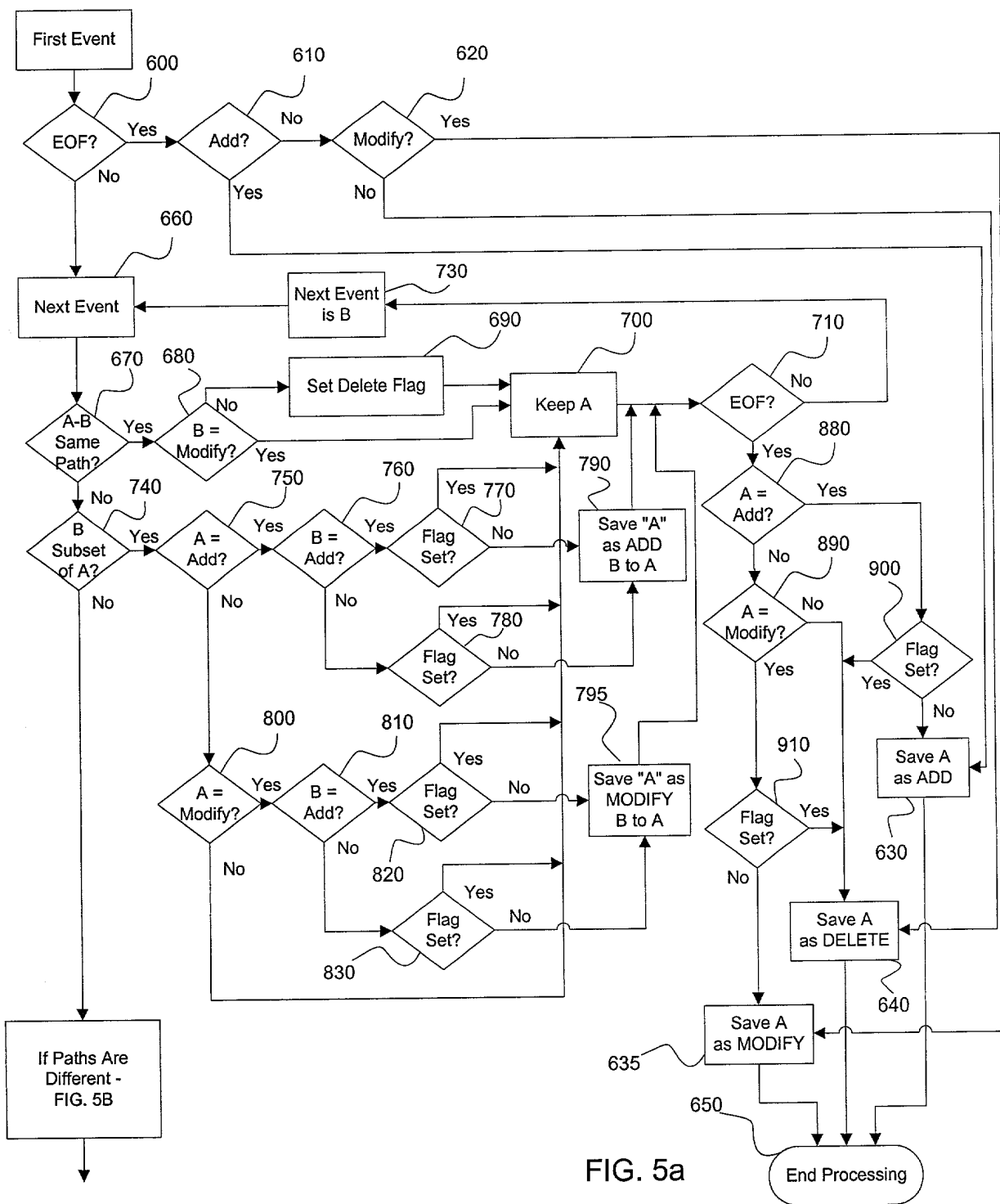
<u>XQL Path</u> [310]	<u>Reference</u>	<u>Nature of Event</u> [320]	<u>Time</u> [330]
//person[@ID="2"]/phone	[380]	change	8/17/00 7:03:06 p.m.
//person[@ID="3"]/email	[381]	change	8/17/00 7:03:10 p.m.
//person[@ID="4"]	[382]	add	8/17/00 7:03:14 p.m.
//person[@ID="4"]/name	[383]	add	8/17/00 7:03:15 p.m.
//person[@ID="4"]/phone	[384]	add	8/17/00 7:03:20 p.m.
//person[@ID="4"]/email	[385]	add	8/17/00 7:03:25 p.m.
//person[@ID="2"]	[386]	delete	8/17/00 7:03:26 p.m.
//person[@ID="4"]/phone	[387]	change	8/18/00 9:51:00 a.m.

FIG. 3b

SORTED EVENT TABLE:

Event	Type	Reference	Data
//person[@ID=2"]	DELETE	[386]	
//person[@ID=@2A]/phone	MODIFY	[380]	phone=206-987-3456
//person[@ID=@3A]/email	MODIFY	[381]	email="sallyj@newdomain.com"
//person[@ID=@4A]	ADD	[382]	person[@ID=@4"]
//person[@ID=@4A]/email	ADD	[385]	email="croe@mydomain.com"
//person[@ID=@4A]/name	ADD	[383]	name = "Carol Roe"
//person[@ID=@4A]/phone	ADD	[384]	phone = "205-432-1098"
//person[@ID=@4A]/phone	MODIFY	[387]	phone = "205-432-1100"

FIG. 4



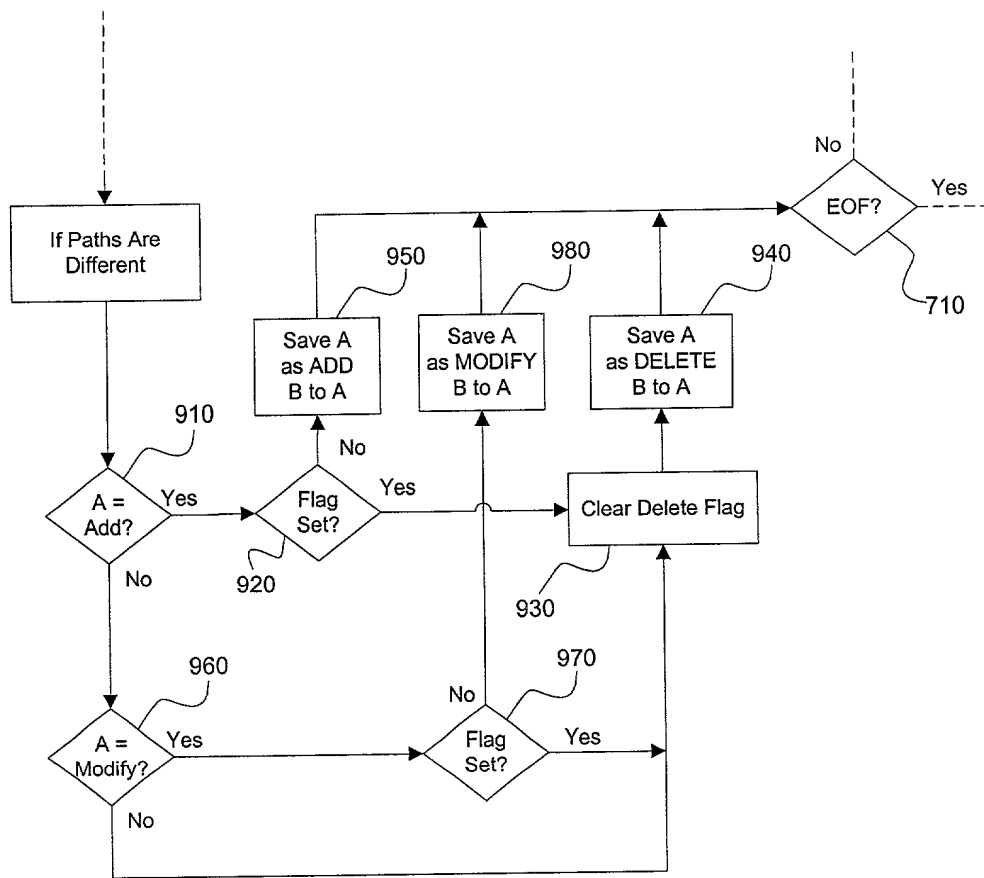


FIG. 5b

SAVE LIST

Event	Type	Reference	Data
//person[@ID="2"]	DELETE	[386]	
//person[@ID="3"]/email	MODIFY	[381]	email = "sallyj@newdomain.com"
//person[@ID="4"]	ADD	[382]	person[@ID="4"]
//person[@ID="4"]/email	ADD	[385]	email = "crow@mydomain.com"
//person[@ID="4"]/name	ADD	[383]	name = "Carol Roe"
//person[@ID="4"]/phone	ADD	[384, 387]	phone = "205-432-1100"

FIG. 6

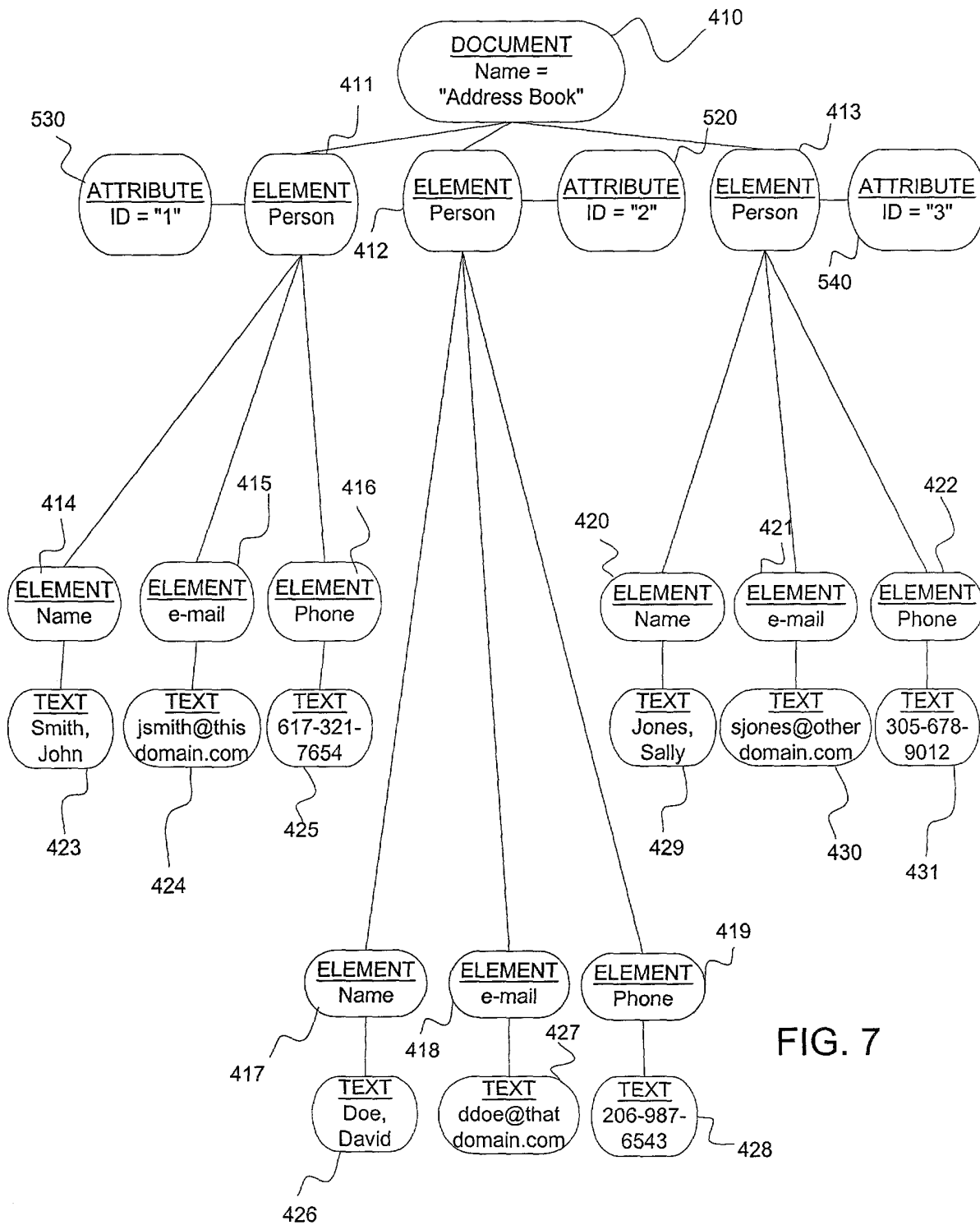


FIG. 7

